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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,258	07/14/2006	Valter Drazic	PF030134	3058

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EXAMINER	
SNYDER, ZACHARY J	

ART UNIT	PAPER NUMBER
2889	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,258	DRAZIC ET AL.	
	Examiner	Art Unit	
	Zachary Snyder	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Receipt is acknowledged of applicant's amendment filed 11/19/2008.

Claims 1-7 are pending and an action on the merits is as follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,366,017 B1 to Antoniadis et al. in view of U.S. Patent 5,598,291 to Zimmerman et al. further in view of U.S. Patent 6,633,351 B2 to Hira et al.

In regard to claim 1, Antoniadis teaches in figure 2, a lighting or image display panel comprising a substrate carrying:

an electroluminescent organic layer (emissive layer 38, COL. 5, LINE 9) partitioned into electroluminescent cells and inserted between two electrode layers (anode 44, COL. 5, LINE 17, and cathode 33, COL. 4, LINE 58) of which one is transparent (transparent anode 44, COL. 5, LINE 27) and the other opaque (layer 33, COL. 5, LINES 1-5), each cell corresponding to a crossing region of one electrode of each electrode layer

Antoniadis does not teach about a plurality of light extractors corresponding to each cell (pixel) of the display device.

Zimmerman teaches in figure 2B a layer of light extractors (collimating means 10) operating by reflection (sides are reflective, COL. 7, LINE 11), each extractor being made from transparent material (input end 32 remains transparent, COL .7, LINE 12) and being bounded by a light entry interface optically coupled to the electroluminescent layer via the said transparent electrode layer (formed in optical contact with light generating means 6, which corresponds to the display device taught by Antoniadis, therefore the light extractors would be formed on Antoniadis' transparent anode 44), by a light exit interface directed towards the outside of the display panel (light output surface 34), and by side walls forming reflecting optical interfaces for the light propagating within the extractor and forming a closed reflecting surface (sides 33), where the electroluminescent layer region of each cell is flat (taught by Antoniadis in figure 2), is optically coupled to the extractors (formed in optical contact with light generating means 6, which corresponds to the display device taught by Antoniadis, therefore the light extractors would be formed on Antoniadis' transparent anode 44), wherein, for each extractor, the surface of said light exit interface is superior to the surface of said light entry interface (the exit interface is higher than the entry interface).

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Antoniadis and Zimmerman before him or her, to modify the display device of Antoniadis to comprise light extractors as taught by Zimmerman in order to collimate the light emission and have a bright and uniform light source (COL. 2, LINES 25-29).

Zimmerman does not teach that a plurality of extractors corresponds to each cell.

Hira teaches a display device with cells (pixels 22) wherein a plurality of extractors (part 2 of optical functionality sheet 12) correspond to each cell (pixel 22). As shown in figure 11, the

box designating pixel 22 has multiple extractors above it. Additionally, extractors 2 are smaller than pixel 22 (COL. 16, LINES 60-65).

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Antoniadis, Zimmerman, and Hira before him or her, to modify the display device of Antoniadis and Zimmerman to comprise a plurality of light extractors per cell as taught Hira in order to increase the effect of light enhancement by having more light extractors per cell.

In regard to claim 2, Antoniadis in view of Zimmerman and Hira teach the limitations of claim 1. Zimmerman also teaches in figure 2B that the light extractors are formed on the light emitting layer. The layer thicknesses taught by Antoniadis in examples of COL. 7, do not exceed two thousand nanometers for total thickness of the device. Therefore since the light emitting layer is the device taught by Antoniadis, the light extractors cannot be more than 2 micrometers away.

Motivation to combine would be the same as stated in the rejection of Claim 1 above.

In regard to claim 3, Antoniadis in view of Zimmerman and Hira teach the limitations of claim 1.

Hira teaches that the light extractors 2 have a size smaller than that of the cells 22 (COL. 16, LINES 60-65).

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Antoniadis, Zimmerman, and Hira before him or her, to modify the

display device of Antoniadis and Zimmerman to comprise over 100 light extractors per cell as taught Hira in order to increase the effect of light enhancement by having more light extractors per cell.

In regard to claim 4, Antoniadis in view of Zimmerman and Hira teach the limitations of claim 1.

Antoniadis also teaches in figure 2 that the transparent electrode (44) is positive above the organic layer (38) on the opposite side from the substrate (30).

In regard to claim 5, Antoniadis in view of Zimmerman and Hira teach the limitations of claim 4.

Zimmerman teaches in figure 2b the formation of a light extracting layer on the light source of a display device as discussed in regard to claim 1. Since the light extracting layers taught by Zimmerman cover the upper surface of the display device taught by Antoniadis, it will be encapsulating the display device.

Motivation to combine would be the same as stated in the rejection of Claim 1 above.

In regard to claim 6, Antoniadis in view of Zimmerman and Hira teach the limitations of claim 4.

Zimmerman teaches in figure 2b the formation of a light extracting layer on the light source of a display device as discussed in regard to claim 1. Since in the light source taught by

Antoniadis, the transparent electrode layer is the top layer, the light extractors taught by Zimmerman would be formed directly onto the transparent electrode layer.

Motivation to combine would be the same as stated in the rejection of Claim 1 above.

In regard to claim 7, Antoniadis in view of Zimmerman and Hira teach the limitations of claim 1. Antoniadis teaches that the opaque electrode 33 is reflecting (the electrode on the substrate is reflective, abstract).

Response to Arguments

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary Snyder whose telephone number is (571)270-5291. The examiner can normally be reached on Monday through Thursday, 7:30AM to 6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary Snyder/
Examiner, Art Unit 2889

/Toan Ton/
Supervisory Patent Examiner, Art Unit 2889